PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**MARATHON OIL PERMIAN**
LEASE NO.:	**NMNM113419**
WELL NAME & NO.:	**ENDER WIGGINS F C 25 34 14 WA 1H**
SURFACE HOLE FOOTAGE:	**2449'/N & 612'/W**
BOTTOM HOLE FOOTAGE	**330'/N & 330'/W**
LOCATION:	**SECTION 14, T25S, R34E, NMPM**
COUNTY:	**LEA, NEW MEXICO**

COA

H2S	○ Yes	◉ No	
Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	◉ Low	○ Medium	○ High
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	○ Conventional	◉ Multibowl	○ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP

A. Hydrogen Sulfide

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **950** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
    b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)

Approval Date: 08/23/2018

c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Operator shall filled 1/3rd casing with fluid while running intermediate casing to maintain collapse safety factor.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:
   - Cement to surface. If cement does not circulate see B.1.a, c-d above.

Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

3. The minimum required fill of cement behind the **7** inch production casing is:
   - Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.

4. The minimum required fill of cement behind the **4-1/2** inch production liner is:
   - Cement should tie-back 200' into the previous casing. Operator shall provide method of verification.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).

2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **10,000 (10M)** psi.

Variance approved to use a 5M annular. The annular must be tested to full working pressure (5000 psi.)

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☒ Chaves and Roosevelt Counties
Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.
During office hours call (575) 627-0272.
After office hours call (575)

☒ Eddy County
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

☒ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 393-3612

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
   a. Operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. Operator proposes to set surface casing with Spudder Rig
   - **Notify the BLM when moving in and removing the Spudder Rig.**
   - **Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.**
   - **BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.**

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log (one log per well pad is acceptable) run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
    e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).

c. The tests shall be done by an independent service company utilizing a test plug. The results of the test shall be reported to the appropriate BLM office.

d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

e. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes. This test shall be performed prior to the test at full stack pressure.

g. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

Waste Minimization Plan (WMP)

In the interest of resource development, submission of additional well gas capture development plan information is deferred but may be required by the BLM Authorized Officer at a later date.

ZS 081318

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

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WELL NAME & NO.:	ENDER WIGGINS F C 25 34 14 WA 1H
SURFACE HOLE FOOTAGE:	2449'/N & 612'/W
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COUNTY:	LEA

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Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

Hydrology:

The entire well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. The compacted berm shall be constructed at a minimum of 12 inches with impermeable mineral material (e.g. caliche). Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed. Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion. Stockpiling of topsoil is required. The top soil shall be stockpiled in an appropriate location to prevent loss of soil due to water or wind erosion and not used for berming or erosion control. If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank or 24 hour production, whichever is greater. Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

A leak detection plan will be submitted to the BLM Carlsbad Field Office for approval prior to pipeline installation. The method could incorporate gauges to detect pressure drops, situating valves and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing
The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

G. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

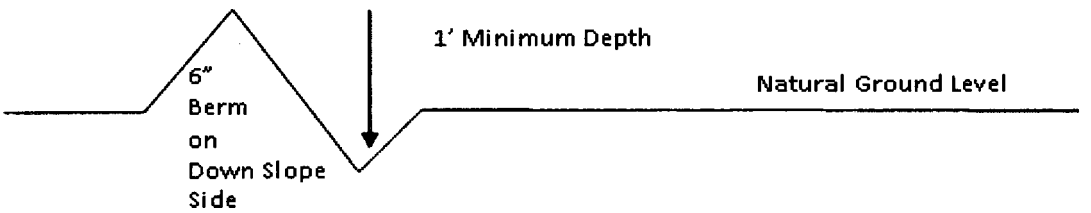
Ditching
Ditching shall be required on both sides of the road.

Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage
Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

400 foot road with 4% road slope: $\frac{400'}{4\%} + 100' = 200'$ lead-off ditch interval

Cattle guards
An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

Fence Requirement
Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Public Access
Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Construction Steps

1. Salvage topsoil
2. Construct road
3. Redistribute topsoil
4. Revegetate slopes

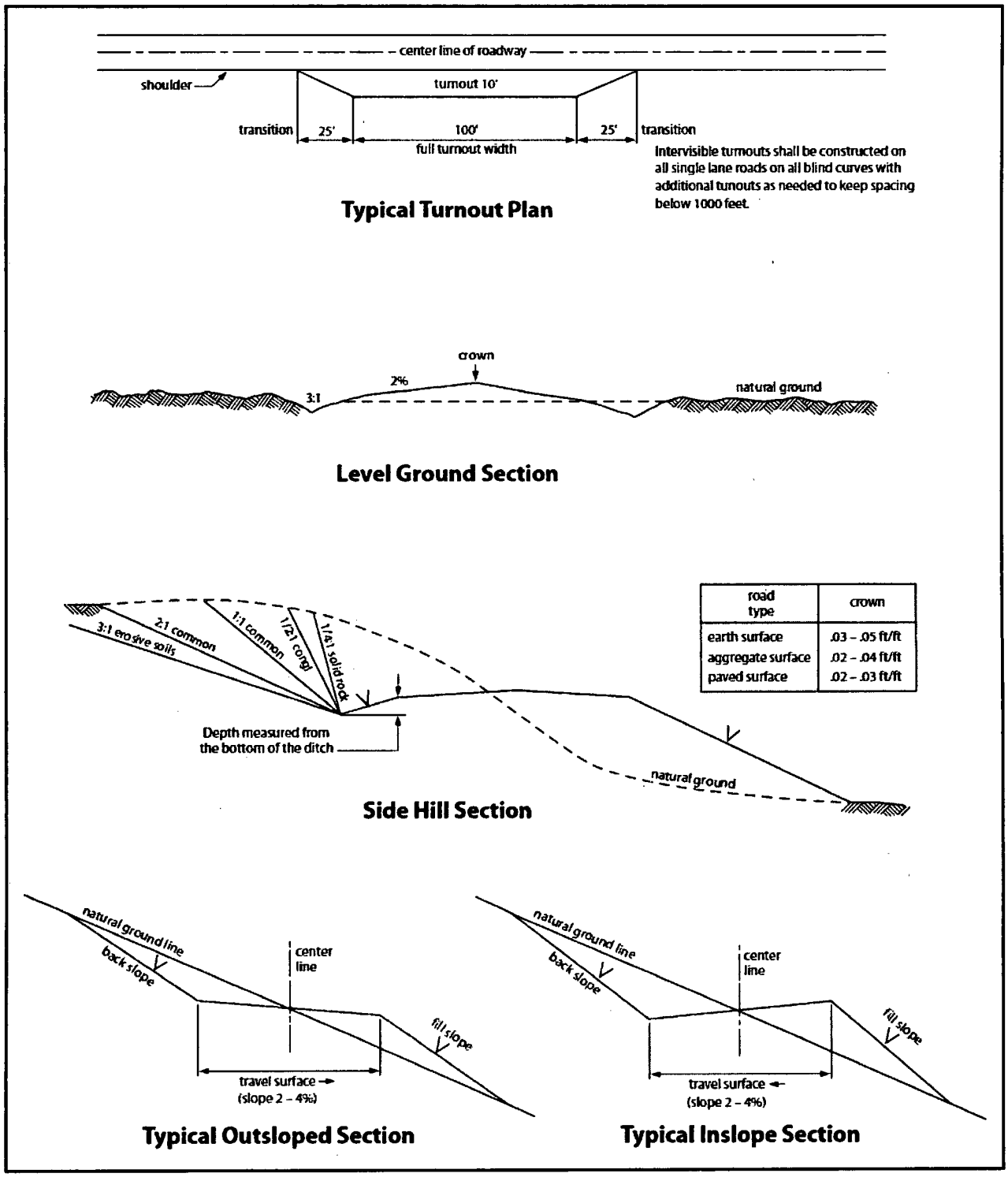


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Exclosure Netting (Open-top Tanks)
Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening
The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures
The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

Containment Structures

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

VIII. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

IX. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

Seed Mixture for LPC Sand/Shinnery Sites

Holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed shall be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed shall be either certified or registered seed. The seed container shall be tagged in accordance with State law(s) and available for inspection by the Authorized Officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). Holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. Seeding shall be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth may not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Operator Certification Data Report

08/24/2018

Operator Certification

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

NAME: Jennifer Van Curen **Signed on:** 03/06/2018

Title: Sr. Regulatory Compliance Rep

Street Address: 5555 San Felipe St.

City: Houston **State:** TX **Zip:** 77056

Phone: (713)296-2500

Email address: jvancuren@marathonoil.com

Field Representative

Representative Name:

Street Address:

City: **State:** **Zip:**

Phone:

Email address:

ADDITIONAL INFORMATION

A. HYDROGEN SULFIDE ESSAY

A deadly enemy of those people employed in the petroleum industry, this gas can paralyze or kill quickly. At least part of the answer lies in education in the hazards, symptoms, characteristics, safe practices, treatment, and the proper use of personal protective equipment.

B. HYDROGEN SULFIDE HAZARDS

The principal hazard to personnel is asphyxiation or poisoning by inhalation. Hydrogen Sulfide is a colorless, flammable gas having an offensive odor and a sweetish taste. It is highly toxic and doubly hazardous because it is heavier than air (specific gravity = 1.19). It's offensive odor, like that of a rotten egg, has been used as an indicator by many old timers in the oil field, but is not a reliable warning of the presence of gas in a dangerous concentration because people differ greatly I their ability to detect smells. Where high concentrations are encountered, the olfactory nerves are rapidly paralyzed, diluting the sense of smell as a warning indicator. A concentration of a few hundredths of one percent higher than that causing irritation can cause asphyxia and death-in other words there is a very narrow margin between conscious ness and unconsciousness, and between unconsciousness and death.

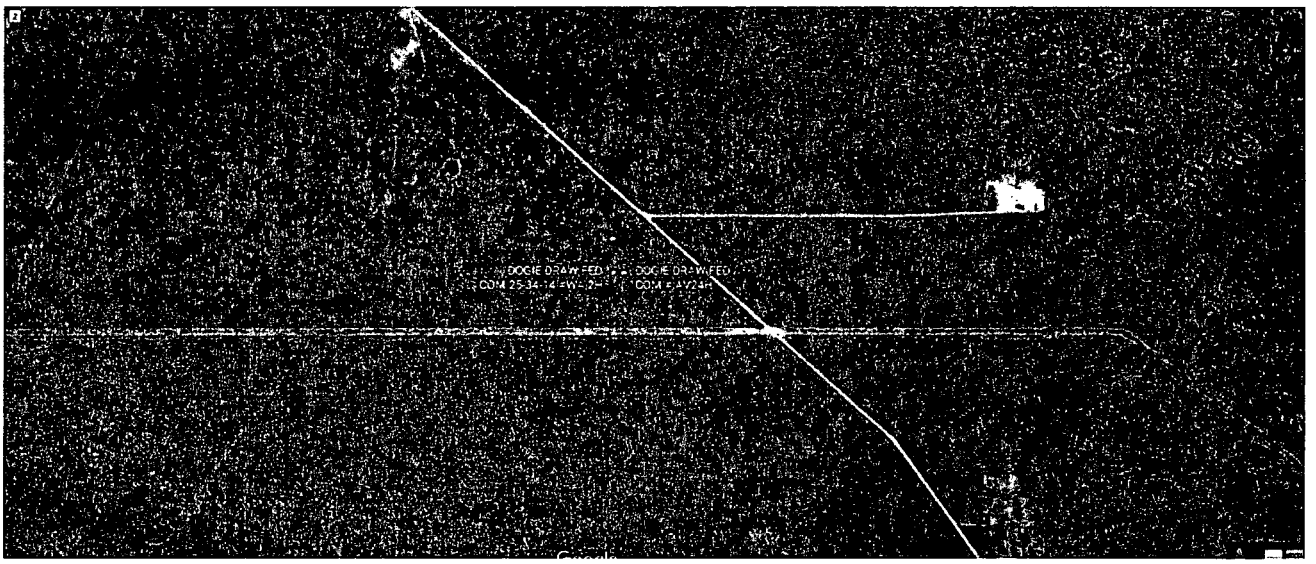
Where high concentrations cause respiratory paralysis, spontaneous breathing does not return unless artificial respiration is applies. Although breathing is paralyzed the heart may continue beating for ten minutes after the attack.

C. PHYSIOLOGICAL SYSTEMS

ACUTE: results in almost instantaneous asphyxia, with seeming respiratory paralysis acute poisoning, or strangulation, may occur after even a few seconds inhalation of high concentration and results in panting respiration, pallor, cramps, paralysis and almost immediate loss of consciousness with extreme rapidity from respiratory and cardiac paralysis. One breath of a sufficiently high concentration may have this result.

RESIDENTS AND LANDOWNERS

AERIAL SATELLITE MAP



RESIDENCE

THERE ARE NO RESIDENCE WITHIN 1 MILE RADIUS OF WELL LOCATION.

SUBACUTE: RESULTS IN IRRITATION, PRINCIPALLY OF THE EYES, PERSISTENT COUGH, TIGHTENING OR BURNING IN THE CHEST AND SKIN IRRITATION FOLOWED BY DEPRESSION OF THE CENTRAL NERVOUS SYSTEM. The eye irritation ranges in severity from mild conjunctivitis to swelling and bulging of the conjunctiva photophobia (abnormal intolerance of light) and temporary blindness.

D. TREATMENT

1. Victim should be removed to fresh air immediately by rescuers wearing respiratory protective equipment. Protect yourself while rescuing.
2. If the victim is not breathing, begin immediately to apply artificial respiration. (See other chart for the chances for life after breathing has stopped.) If a resuscitator is available let another employee get it and prepare for use.
3. Treat for shock, keep victim warm and comfortable
4. Call a doctor, in all cases, victims of poisoning should be attended by a physician.

E. CHARACTERISTICS OF H2S

1. Extremely Toxic (refer to chart for toxicity of Hydrogen Sulfide).
2. Heavier than air. Specific gravity= 1.19.
3. Colorless, has odor of rotten eggs.
4. Burns with a blue flame and produces sulfur Dioxide (SO2) gas, which is very irritating to eyes and lungs. The SO2 is also toxic and can cause serious injury.
5. H2S is almost as toxic as hydrogen cyanide.
6. H2S forms explosive mixture, with air between 4.3% and 46% by volume.
7. Between 5 and 6 times as toxic as carbon monoxide.
8. Produces irritation to eyes, throat, and respiratory tract.
9. Threshold Limit Value (TLV) maximum of eight hours exposure without protective respiratory equipment-10ppm.

F. SAFE PRACTICES

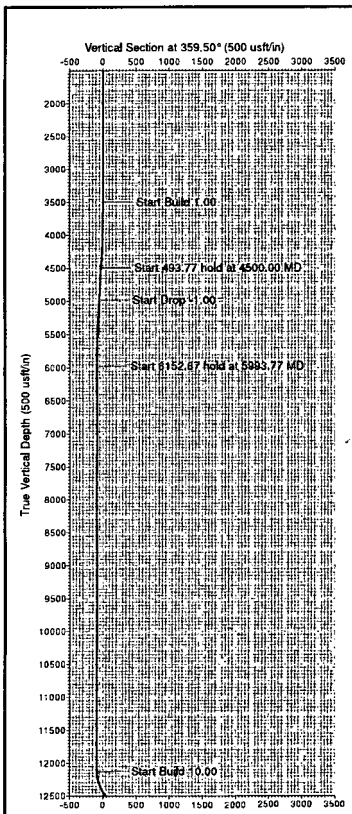
If you are faced with an H2S problem in your operations, the following safe practices are recommended:

1. Be absolutely sure all concerned are familiar with the hazards concerning H2S and how to avoid it.
2. All employees should know how to operate and maintain respiration equipment.
3. Be able to give and demonstrate artificial respiration.
4. Post areas where there is poisonous gas with suitable warning signs.
5. Be sure all new employees are thoroughly schooled before they are sent to the field-tomorrow may be too late.
6. Teach men to avoid gas whenever possible-work on the windward side, have fresh air mask available.
7. Never let bad judgment guide you-wear respiratory equipment when gauging tanks, etc. Never try to hold your breath in order to enter a contaminated atmosphere.
8. In areas of high concentration, a two-man operation is preferred.
9. Never enter a tank, cellar or other enclosed place where gas can accumulate without proper respiratory protective equipment and a safety belt secured to a lifeline held by another person outside.
10. Always check out danger areas first with H2S detectors before allowing anyone to enter. DO NOT TRY TO DETERMINE THE PRESENCE OF GAS BY its ODOR.
11. Wear proper respiratory equipment for the job at hand. Never take a chance with equipment with which you are unfamiliar. If in doubt, consult your supervisor.
12. Carry out practice drills every month with emergency and maintenance breathing air equipment. Telling or showing a group how to operate equipment is not enough-make them show you.
13. Maximum care should be taken to prevent the escape of fumes into the air of working places by leaks, etc.
14. Communication such as radio and telephones should be provided for those people employed where H2S may be present.

TOXICITY OF HYDROGEN SULFIDE TO MEN

H2S Per Cent (PPM)**	0 - 2 Minutes	0 - 15 Minutes	15 - 30 Minutes	30 Minutes to 1 hour	1 - 4 Hours	4 - 8 Hours	4 - 48 Hours
0.005 (50) 0.010 (100)				Mild Conjunctivities; respiratory tract irritation			
0.010 (100) 0.015 (150)		Coughing; irritation of eyes; loss of sense of smell	Disturbed respiration; pain in eyes; sleepiness	Throat	Salivation & mucous discharge; sharp pain in eyes; coughing	Increased symptoms*	Hemorrhage & death*
0.015 (150) 0.020 (200)		Loss of sense of smell	Throat & eye irritation	Throat & eye irritation	Difficult breathing; blurred vision; light & shy	Serious irritating effects	Hemorrhage & death*
0.025 (250) 0.035 (350)	Irritation of eyes; loss of sense of smell	Irritation of eyes	Painful secretion of tears; weariness	Light & shy; nasal catarrh; pain in eyes; difficult breathing	Hemorrhage & death		
0.035 (350)		Irritation of eyes; loss of sense of smell	Difficult respiration coughing; irritation of eyes	Increased irritation of eyes and nasal tract; dull pain head; weariness; light shy	Dizziness weakness; increased irritation; death	Death*	
0.050 (500)	Coughing collapse & unconsciousness	Respiratory disturbances; irritation of eyes; collapse	Serious eye irritation; palpitation of heart; few cases of death*	Severe pain in eyes and head dizziness; trembling of extreities; great weakness & death*			
0.060 (600) 0.070 (700) 0.808 (800) 0.100 (1000) 0.150 (1500)	Collapse * unconsciousness; death*	Collapse* unconsciousness; death*					

*Data secured from experiments of dogs which have susceptibility similar to men. **PPM - parts per million



Marathon Oil Corporation

Marathon Oil
Lea County, NM
Ender Wiggins Fed 25-34-14
WA #1H
Prelim Plan A
GL: 3332' + KB: 26.5' (H&P480)

US State Plane 1927 (Exact solution)
NAD 1927 (NADCON CONUS)
Clarke 1866
New Mexico East 3001
Mean Sea Level

RKB Elevation: Well @ 3358.50usft (GL: 3332' + KB: 26.5' (H&P480))

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	412472.60	774420.12	32.130900	-103.446846	

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	3500.00	0.00	0.00	3500.00	0.00	0.00	0.00	0.00
3	4500.00	10.00	249.26	4494.93	-30.82	-81.41	1.00	-30.11
4	4993.77	10.00	249.26	4981.20	-61.18	-161.59	0.00	-59.77
5	5993.77	0.00	0.00	5976.13	-92.00	-243.00	1.00	-89.88
6	12146.64	0.00	0.00	12129.00	-92.00	-243.00	0.00	-89.88
7	13046.64	90.00	355.90	12701.96	478.49	-283.97	10.00	481.95
8	13166.50	90.00	359.50	12701.96	598.23	-288.78	3.00	601.73
9	19963.32	90.00	359.50	12702.00	7395.79	-348.59	0.00	7398.55

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
[EndWigFed#1H]FTP	12222.00	137.84	-285.54	412610.44	774134.58
[EndWigFed#1H]LTP/BHL	12702.00	7395.79	-348.59	419868.39	774071.53

PRODIRECTIONAL

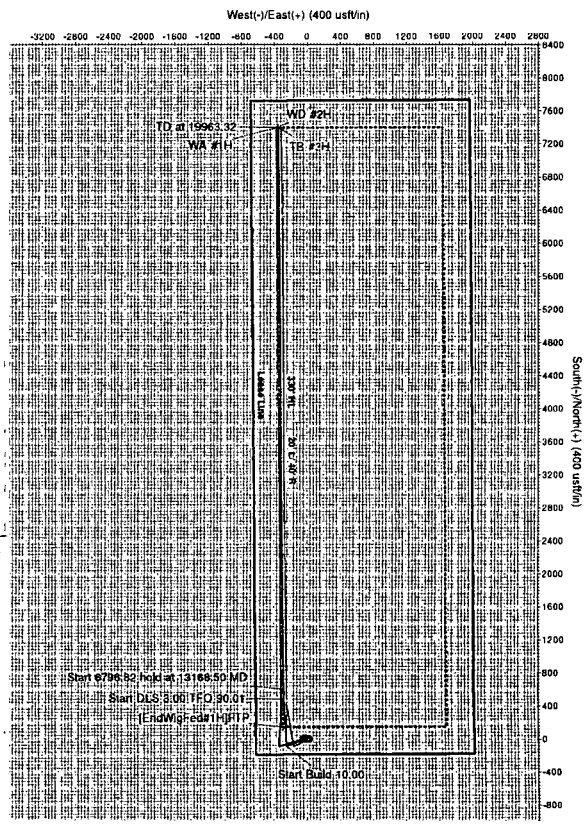
Azimuths to Grid North
True North: -0.47°
Magnetic North: 6.28°

Magnetic Field
Strength: 47942.6nT
Dip Angle: 59.63°
Date: 1/30/2018
Model: HDGM

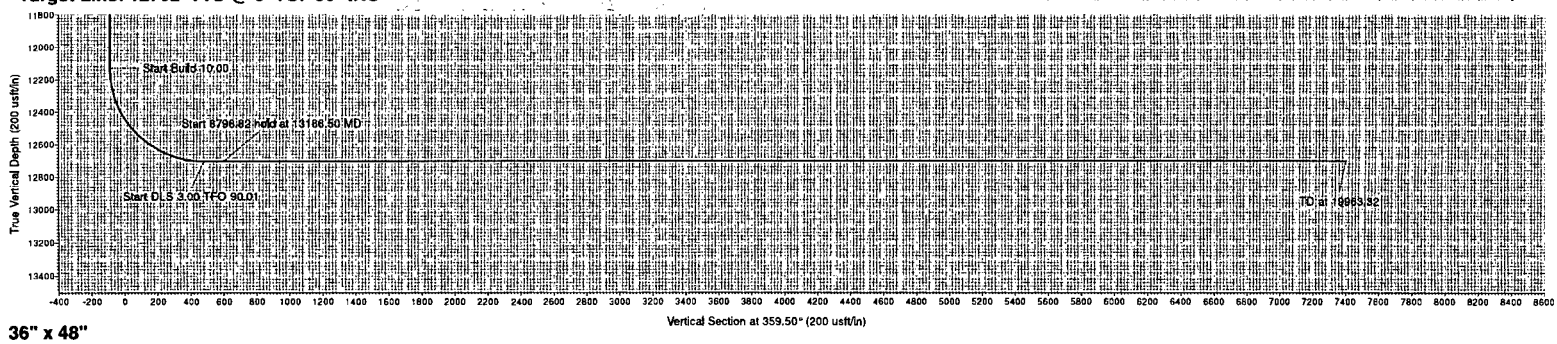
Azimuth Corrections

Total Magnetic Corr. (M to G): 6.28°

Declination (M to T): 6.75° East



Target Line: 12702' TVD @ 0' VS: 90° INC



36" x 48"

Marathon Oil

Pro Directional
Survey Report

PRODIRECTIONAL

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well WA #1H
Project:	Lea County, NM	**TVD Reference:**	Well @ 3358.50usft (GL: 3332' + KB: 26.5' (H&P480))
Site:	Ender Wiggins Fed 25-34-14	**MD Reference:**	Well @ 3358.50usft (GL: 3332' + KB: 26.5' (H&P480))
Well:	WA #1H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim Plan A	**Database:**	WellPlanner1

Project	Lea County, NM		
Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Ender Wiggins Fed 25-34-14				
Site Position:		**Northing:**	412,472.60 usft	**Latitude:**	32.130900
From:	Map	**Easting:**	774,420.12 usft	**Longitude:**	-103.446846
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.47 °

Well	WA #1H					
Well Position	**+N/-S**	0.00 usft	**Northing:**	412,472.60 usft	**Latitude:**	32.130900
	+E/-W	0.00 usft	**Easting:**	774,420.12 usft	**Longitude:**	-103.446846
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	usft	**Ground Level:**	3,332.00 usft

Wellbore	OH				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	HDGM	1/30/2018	6.75	59.82	47,942.60

Design	Prelim Plan A				
Audit Notes:					
Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**
	0.00	0.00	0.00	359.50

Survey Tool Program **Date** 1/30/2018

From (usft)	**To (usft)**	**Survey (Wellbore)**	**Tool Name**	**Description**
0.00	950.00	Prelim Plan A (OH)	MWD+IFR1	OWSG MWD + IFR1
950.00	5,450.00	Prelim Plan A (OH)	MWD+IFR1	OWSG MWD + IFR1
5,450.00	12,145.00	Prelim Plan A (OH)	MWD+IFR1	OWSG MWD + IFR1
12,145.00	13,045.00	Prelim Plan A (OH)	MWD+IFR1	OWSG MWD + IFR1
13,045.00	19,962.97	Prelim Plan A (OH)	MWD+IFR1	OWSG MWD + IFR1

Planned Survey

Measured Depth (usft)	**Inclination (°)**	**Azimuth (°)**	**Vertical Depth (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Vertical Section (usft)**	**Dogleg Rate (°/100usft)**	**Build Rate (°/100usft)**	**Turn Rate (°/100usft)**
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well WA #1H
Project:	Lea County, NM	**TVD Reference:**	Well @ 3358.50usft (GL: 3332' + KB: 26.5' (H&P480))
Site:	Ender Wiggins Fed 25-34-14	**MD Reference:**	Well @ 3358.50usft (GL: 3332' + KB: 26.5' (H&P480))
Well:	WA #1H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim Plan A	**Database:**	WellPlanner1

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	1.00	249.26	3,600.00	-0.31	-0.82	-0.30	1.00	1.00	0.00
3,700.00	2.00	249.26	3,699.96	-1.24	-3.26	-1.21	1.00	1.00	0.00
3,800.00	3.00	249.26	3,799.86	-2.78	-7.34	-2.72	1.00	1.00	0.00
3,900.00	4.00	249.26	3,899.68	-4.94	-13.05	-4.83	1.00	1.00	0.00
4,000.00	5.00	249.26	3,999.37	-7.72	-20.39	-7.54	1.00	1.00	0.00
4,100.00	6.00	249.26	4,098.90	-11.11	-29.35	-10.86	1.00	1.00	0.00
4,200.00	7.00	249.26	4,198.26	-15.12	-39.94	-14.77	1.00	1.00	0.00
4,300.00	8.00	249.26	4,297.40	-19.74	-52.15	-19.29	1.00	1.00	0.00
4,400.00	9.00	249.26	4,396.30	-24.98	-65.97	-24.40	1.00	1.00	0.00
4,500.00	10.00	249.26	4,494.93	-30.82	-81.41	-30.11	1.00	1.00	0.00
4,600.00	10.00	249.26	4,593.41	-36.97	-97.65	-36.12	0.00	0.00	0.00

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well WA #1H
Project:	Lea County, NM	**TVD Reference:**	Well @ 3358.50usft (GL: 3332' + KB: 26.5' (H&P480))
Site:	Ender Wiggins Fed 25-34-14	**MD Reference:**	Well @ 3358.50usft (GL: 3332' + KB: 26.5' (H&P480))
Well:	WA #1H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim Plan A	**Database:**	WellPlanner1

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,700.00	10.00	249.26	4,691.89	-43.12	-113.89	-42.12	0.00	0.00	0.00
4,800.00	10.00	249.26	4,790.37	-49.27	-130.13	-48.13	0.00	0.00	0.00
4,900.00	10.00	249.26	4,888.85	-55.41	-146.37	-54.13	0.00	0.00	0.00
4,993.77	10.00	249.26	4,981.20	-61.18	-161.59	-59.77	0.00	0.00	0.00
5,000.00	9.94	249.26	4,987.34	-61.56	-162.60	-60.14	1.00	-1.00	0.00
5,100.00	8.94	249.26	5,085.98	-67.37	-177.94	-65.81	1.00	-1.00	0.00
5,200.00	7.94	249.26	5,184.90	-72.56	-191.66	-70.89	1.00	-1.00	0.00
5,300.00	6.94	249.26	5,284.05	-77.15	-203.77	-75.36	1.00	-1.00	0.00
5,400.00	5.94	249.26	5,383.42	-81.12	-214.25	-79.24	1.00	-1.00	0.00
5,500.00	4.94	249.26	5,482.97	-84.47	-223.11	-82.52	1.00	-1.00	0.00
5,600.00	3.94	249.26	5,582.67	-87.21	-230.35	-85.20	1.00	-1.00	0.00
5,700.00	2.94	249.26	5,682.49	-89.33	-235.96	-87.27	1.00	-1.00	0.00
5,800.00	1.94	249.26	5,782.40	-90.84	-239.94	-88.74	1.00	-1.00	0.00
5,900.00	0.94	249.26	5,882.36	-91.73	-242.28	-89.61	1.00	-1.00	0.00
5,993.77	0.00	0.00	5,976.13	-92.00	-243.00	-89.88	1.00	-1.00	0.00
6,000.00	0.00	0.00	5,982.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
6,100.00	0.00	0.00	6,082.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
6,200.00	0.00	0.00	6,182.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
6,300.00	0.00	0.00	6,282.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
6,400.00	0.00	0.00	6,382.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
6,500.00	0.00	0.00	6,482.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
6,600.00	0.00	0.00	6,582.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
6,700.00	0.00	0.00	6,682.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
6,800.00	0.00	0.00	6,782.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
6,900.00	0.00	0.00	6,882.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
7,000.00	0.00	0.00	6,982.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
7,100.00	0.00	0.00	7,082.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
7,200.00	0.00	0.00	7,182.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
7,300.00	0.00	0.00	7,282.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
7,400.00	0.00	0.00	7,382.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
7,500.00	0.00	0.00	7,482.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
7,600.00	0.00	0.00	7,582.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
7,700.00	0.00	0.00	7,682.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
7,800.00	0.00	0.00	7,782.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
7,900.00	0.00	0.00	7,882.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
8,000.00	0.00	0.00	7,982.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
8,100.00	0.00	0.00	8,082.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
8,200.00	0.00	0.00	8,182.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
8,300.00	0.00	0.00	8,282.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
8,400.00	0.00	0.00	8,382.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
8,500.00	0.00	0.00	8,482.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
8,600.00	0.00	0.00	8,582.36	-92.00	-243.00	-89.88	0.00	0.00	0.00

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well WA #1H
Project:	Lea County, NM	**TVD Reference:**	Well @ 3358.50usft (GL: 3332' + KB: 26.5' (H&P480))
Site:	Ender Wiggins Fed 25-34-14	**MD Reference:**	Well @ 3358.50usft (GL: 3332' + KB: 26.5' (H&P480))
Well:	WA #1H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim Plan A	**Database:**	WellPlanner1

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,700.00	0.00	0.00	8,682.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
8,800.00	0.00	0.00	8,782.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
8,900.00	0.00	0.00	8,882.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
9,000.00	0.00	0.00	8,982.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
9,100.00	0.00	0.00	9,082.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
9,200.00	0.00	0.00	9,182.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
9,300.00	0.00	0.00	9,282.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
9,400.00	0.00	0.00	9,382.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
9,500.00	0.00	0.00	9,482.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
9,600.00	0.00	0.00	9,582.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
9,700.00	0.00	0.00	9,682.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
9,800.00	0.00	0.00	9,782.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
9,900.00	0.00	0.00	9,882.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
10,000.00	0.00	0.00	9,982.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
10,100.00	0.00	0.00	10,082.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
10,200.00	0.00	0.00	10,182.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
10,300.00	0.00	0.00	10,282.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
10,400.00	0.00	0.00	10,382.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
10,500.00	0.00	0.00	10,482.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
10,600.00	0.00	0.00	10,582.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
10,700.00	0.00	0.00	10,682.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
10,800.00	0.00	0.00	10,782.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
10,900.00	0.00	0.00	10,882.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
11,000.00	0.00	0.00	10,982.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
11,100.00	0.00	0.00	11,082.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
11,200.00	0.00	0.00	11,182.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
11,300.00	0.00	0.00	11,282.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
11,400.00	0.00	0.00	11,382.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
11,500.00	0.00	0.00	11,482.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
11,600.00	0.00	0.00	11,582.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
11,700.00	0.00	0.00	11,682.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
11,800.00	0.00	0.00	11,782.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
11,900.00	0.00	0.00	11,882.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
12,000.00	0.00	0.00	11,982.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
12,100.00	0.00	0.00	12,082.36	-92.00	-243.00	-89.88	0.00	0.00	0.00
12,146.64	0.00	0.00	12,129.00	-92.00	-243.00	-89.88	0.00	0.00	0.00
12,150.00	0.34	355.90	12,132.36	-91.99	-243.00	-89.87	10.00	10.00	0.00
12,200.00	5.34	355.90	12,182.28	-89.52	-243.18	-87.40	10.00	10.00	0.00
12,250.00	10.34	355.90	12,231.80	-82.73	-243.66	-80.60	10.00	10.00	0.00
12,290.00	14.34	355.90	12,270.87	-74.20	-244.28	-72.07	10.00	10.00	0.00
[EndWigFed#1H]FTP									
12,300.00	15.34	355.90	12,280.54	-71.65	-244.46	-69.51	10.00	10.00	0.00

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well WA #1H
Project:	Lea County, NM	**TVD Reference:**	Well @ 3358.50usft (GL: 3332' + KB: 26.5' (H&P480))
Site:	Ender Wiggins Fed 25-34-14	**MD Reference:**	Well @ 3358.50usft (GL: 3332' + KB: 26.5' (H&P480))
Well:	WA #1H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim Plan A	**Database:**	WellPlanner1

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,350.00	20.34	355.90	12,328.12	-56.38	-245.55	-54.23	10.00	10.00	0.00
12,400.00	25.34	355.90	12,374.18	-37.03	-246.94	-34.87	10.00	10.00	0.00
12,450.00	30.34	355.90	12,418.38	-13.75	-248.61	-11.58	10.00	10.00	0.00
12,500.00	35.34	355.90	12,460.38	13.28	-250.55	15.47	10.00	10.00	0.00
12,550.00	40.34	355.90	12,499.86	43.87	-252.74	46.07	10.00	10.00	0.00
12,600.00	45.34	355.90	12,536.51	77.76	-255.17	79.99	10.00	10.00	0.00
12,650.00	50.34	355.90	12,570.06	114.72	-257.82	116.96	10.00	10.00	0.00
12,700.00	55.34	355.90	12,600.26	154.45	-260.67	156.72	10.00	10.00	0.00
12,750.00	60.34	355.90	12,626.87	196.65	-263.69	198.95	10.00	10.00	0.00
12,800.00	65.34	355.90	12,649.69	241.01	-266.87	243.33	10.00	10.00	0.00
12,850.00	70.34	355.90	12,668.54	287.18	-270.18	289.53	10.00	10.00	0.00
12,900.00	75.34	355.90	12,683.30	334.82	-273.59	337.19	10.00	10.00	0.00
12,950.00	80.34	355.90	12,693.83	383.56	-277.09	385.96	10.00	10.00	0.00
13,000.00	85.34	355.90	12,700.06	433.02	-280.63	435.45	10.00	10.00	0.00
13,046.64	90.00	355.90	12,701.96	479.49	-283.97	481.95	10.00	10.00	0.00
13,100.00	90.00	357.50	12,701.96	532.76	-287.04	535.25	3.00	0.00	3.00
13,166.50	90.00	359.50	12,701.96	599.24	-288.78	601.73	3.00	0.00	3.00
13,200.00	90.00	359.50	12,701.96	632.73	-289.07	635.23	0.00	0.00	0.00
13,300.00	90.00	359.50	12,701.96	732.73	-289.95	735.23	0.00	0.00	0.00
13,400.00	90.00	359.50	12,701.96	832.73	-290.83	835.23	0.00	0.00	0.00
13,500.00	90.00	359.50	12,701.96	932.72	-291.71	935.23	0.00	0.00	0.00
13,600.00	90.00	359.50	12,701.96	1,032.72	-292.59	1,035.23	0.00	0.00	0.00
13,700.00	90.00	359.50	12,701.96	1,132.71	-293.47	1,135.23	0.00	0.00	0.00
13,800.00	90.00	359.50	12,701.96	1,232.71	-294.35	1,235.23	0.00	0.00	0.00
13,900.00	90.00	359.50	12,701.96	1,332.71	-295.23	1,335.23	0.00	0.00	0.00
14,000.00	90.00	359.50	12,701.96	1,432.70	-296.11	1,435.23	0.00	0.00	0.00
14,100.00	90.00	359.50	12,701.96	1,532.70	-296.99	1,535.23	0.00	0.00	0.00
14,200.00	90.00	359.50	12,701.96	1,632.70	-297.87	1,635.23	0.00	0.00	0.00
14,300.00	90.00	359.50	12,701.97	1,732.69	-298.75	1,735.23	0.00	0.00	0.00
14,400.00	90.00	359.50	12,701.97	1,832.69	-299.63	1,835.23	0.00	0.00	0.00
14,500.00	90.00	359.50	12,701.97	1,932.68	-300.51	1,935.23	0.00	0.00	0.00
14,600.00	90.00	359.50	12,701.97	2,032.68	-301.39	2,035.23	0.00	0.00	0.00
14,700.00	90.00	359.50	12,701.97	2,132.68	-302.27	2,135.23	0.00	0.00	0.00
14,800.00	90.00	359.50	12,701.97	2,232.67	-303.15	2,235.23	0.00	0.00	0.00
14,900.00	90.00	359.50	12,701.97	2,332.67	-304.03	2,335.23	0.00	0.00	0.00
15,000.00	90.00	359.50	12,701.97	2,432.66	-304.91	2,435.23	0.00	0.00	0.00
15,100.00	90.00	359.50	12,701.97	2,532.66	-305.79	2,535.23	0.00	0.00	0.00
15,200.00	90.00	359.50	12,701.97	2,632.66	-306.67	2,635.23	0.00	0.00	0.00
15,300.00	90.00	359.50	12,701.97	2,732.65	-307.55	2,735.23	0.00	0.00	0.00
15,400.00	90.00	359.50	12,701.97	2,832.65	-308.43	2,835.23	0.00	0.00	0.00
15,500.00	90.00	359.50	12,701.97	2,932.64	-309.31	2,935.23	0.00	0.00	0.00
15,600.00	90.00	359.50	12,701.97	3,032.64	-310.19	3,035.23	0.00	0.00	0.00

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well WA #1H
Project:	Lea County, NM	**TVD Reference:**	Well @ 3358.50usft (GL: 3332' + KB: 26.5' (H&P480))
Site:	Ender Wiggins Fed 25-34-14	**MD Reference:**	Well @ 3358.50usft (GL: 3332' + KB: 26.5' (H&P480))
Well:	WA #1H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim Plan A	**Database:**	WellPlanner1

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,700.00	90.00	359.50	12,701.97	3,132.64	-311.07	3,135.23	0.00	0.00	0.00
15,800.00	90.00	359.50	12,701.97	3,232.63	-311.95	3,235.23	0.00	0.00	0.00
15,900.00	90.00	359.50	12,701.98	3,332.63	-312.83	3,335.23	0.00	0.00	0.00
16,000.00	90.00	359.50	12,701.98	3,432.63	-313.71	3,435.23	0.00	0.00	0.00
16,100.00	90.00	359.50	12,701.98	3,532.62	-314.59	3,535.23	0.00	0.00	0.00
16,200.00	90.00	359.50	12,701.98	3,632.62	-315.47	3,635.23	0.00	0.00	0.00
16,300.00	90.00	359.50	12,701.98	3,732.61	-316.35	3,735.23	0.00	0.00	0.00
16,400.00	90.00	359.50	12,701.98	3,832.61	-317.23	3,835.23	0.00	0.00	0.00
16,500.00	90.00	359.50	12,701.98	3,932.61	-318.11	3,935.23	0.00	0.00	0.00
16,600.00	90.00	359.50	12,701.98	4,032.60	-318.99	4,035.23	0.00	0.00	0.00
16,700.00	90.00	359.50	12,701.98	4,132.60	-319.87	4,135.23	0.00	0.00	0.00
16,800.00	90.00	359.50	12,701.98	4,232.59	-320.75	4,235.23	0.00	0.00	0.00
16,900.00	90.00	359.50	12,701.98	4,332.59	-321.63	4,335.23	0.00	0.00	0.00
17,000.00	90.00	359.50	12,701.98	4,432.59	-322.51	4,435.23	0.00	0.00	0.00
17,100.00	90.00	359.50	12,701.98	4,532.58	-323.39	4,535.23	0.00	0.00	0.00
17,200.00	90.00	359.50	12,701.98	4,632.58	-324.27	4,635.23	0.00	0.00	0.00
17,300.00	90.00	359.50	12,701.98	4,732.58	-325.15	4,735.23	0.00	0.00	0.00
17,400.00	90.00	359.50	12,701.98	4,832.57	-326.03	4,835.23	0.00	0.00	0.00
17,500.00	90.00	359.50	12,701.99	4,932.57	-326.91	4,935.23	0.00	0.00	0.00
17,600.00	90.00	359.50	12,701.99	5,032.56	-327.79	5,035.23	0.00	0.00	0.00
17,700.00	90.00	359.50	12,701.99	5,132.56	-328.67	5,135.23	0.00	0.00	0.00
17,800.00	90.00	359.50	12,701.99	5,232.56	-329.55	5,235.23	0.00	0.00	0.00
17,900.00	90.00	359.50	12,701.99	5,332.55	-330.43	5,335.23	0.00	0.00	0.00
18,000.00	90.00	359.50	12,701.99	5,432.55	-331.31	5,435.23	0.00	0.00	0.00
18,100.00	90.00	359.50	12,701.99	5,532.54	-332.19	5,535.23	0.00	0.00	0.00
18,200.00	90.00	359.50	12,701.99	5,632.54	-333.07	5,635.23	0.00	0.00	0.00
18,300.00	90.00	359.50	12,701.99	5,732.54	-333.95	5,735.23	0.00	0.00	0.00
18,400.00	90.00	359.50	12,701.99	5,832.53	-334.83	5,835.23	0.00	0.00	0.00
18,500.00	90.00	359.50	12,701.99	5,932.53	-335.71	5,935.23	0.00	0.00	0.00
18,600.00	90.00	359.50	12,701.99	6,032.52	-336.59	6,035.23	0.00	0.00	0.00
18,700.00	90.00	359.50	12,701.99	6,132.52	-337.47	6,135.23	0.00	0.00	0.00
18,800.00	90.00	359.50	12,701.99	6,232.52	-338.35	6,235.23	0.00	0.00	0.00
18,900.00	90.00	359.50	12,701.99	6,332.51	-339.23	6,335.23	0.00	0.00	0.00
19,000.00	90.00	359.50	12,701.99	6,432.51	-340.11	6,435.23	0.00	0.00	0.00
19,100.00	90.00	359.50	12,701.99	6,532.51	-340.99	6,535.23	0.00	0.00	0.00
19,200.00	90.00	359.50	12,702.00	6,632.50	-341.87	6,635.23	0.00	0.00	0.00
19,300.00	90.00	359.50	12,702.00	6,732.50	-342.75	6,735.23	0.00	0.00	0.00
19,400.00	90.00	359.50	12,702.00	6,832.49	-343.63	6,835.23	0.00	0.00	0.00
19,500.00	90.00	359.50	12,702.00	6,932.49	-344.51	6,935.23	0.00	0.00	0.00
19,600.00	90.00	359.50	12,702.00	7,032.49	-345.39	7,035.23	0.00	0.00	0.00
19,700.00	90.00	359.50	12,702.00	7,132.48	-346.27	7,135.23	0.00	0.00	0.00
19,800.00	90.00	359.50	12,702.00	7,232.48	-347.15	7,235.23	0.00	0.00	0.00

Company:	Marathon Oil	**Local Co-ordinate Reference:**	Well WA #1H
Project:	Lea County, NM	**TVD Reference:**	Well @ 3358.50usft (GL: 3332' + KB: 26.5' (H&P480))
Site:	Ender Wiggins Fed 25-34-14	**MD Reference:**	Well @ 3358.50usft (GL: 3332' + KB: 26.5' (H&P480))
Well:	WA #1H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	Prelim Plan A	**Database:**	WellPlanner1

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
19,900.00	90.00	359.50	12,702.00	7,332.47	-348.03	7,335.23	0.00	0.00	0.00
19,963.32	90.00	359.50	12,702.00	7,395.79	-348.59	7,398.55	0.00	0.00	0.00
[EndWigFed#1H]LTP/BHL									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
[EndWigFed#1H]FTP	0.00	0.00	12,222.00	137.84	-285.54	412,610.44	774,134.58	32.131285	-103.447765
- plan misses target center by 221.49usft at 12309.18usft MD (12289.37 TVD, -69.16 N, -244.64 E)									
- Point									
[EndWigFed#1H]LTP/BH	0.00	0.00	12,702.00	7,395.79	-348.59	419,868.39	774,071.53	32.151236	-103.447776
- plan hits target center									
- Rectangle (sides W60.00 H7,260.00 D0.00)									

Checked By: _____ Approved By: _____ Date: _____

Batch Drilling Plan

- Marathon Oil Permian LLC. respectfully requests the option to "batch" drill sections of a well with intentions of returning to the well for later completion.
- When it is determined that the use of a "batch" drilling process to increase overall efficiency and reduce rig time on location, the following steps will be utilized to ensure compliant well control before releasing drilling rig during the batch process.
- Succeeding a successful cement job, fluid levels will be monitored in both the annulus and casing string to be verified static.
- A mandrel hanger packoff will be ran and installed in the multi-bowl wellhead isolating and creating a barrier on the annulus. This packoff will be tested to 5,000 PSI validating the seals.
- At this point the well is secure and the drilling adapter will be removed from the wellhead.
- A 13-5/8" 5M temporary abandonment cap will be installed on the wellhead by stud and nut flange. The seals of the TA cap will then be pressure tested to 5,000 PSI.
- The drilling rig will skid to the next well on the pad to continue the batch drilling process.
- When returning to the well with the TA cap, the TA cap will be removed and the BOP will be nippled up on the wellhead.
- A BOP test will then be conducted according to Onshore Order #2 and drilling operations will resume on the subject well.

Request for Surface Rig

- Marathon Oil Permian LLC. Requests the option to contract a surface rig to drill, set surface casing and cement on the subject well. If the timing between rigs is such that Marathon Oil Permian LLC. would not be able to preset the surface section, the primary drilling rig will drill the well in its entirety per the APD.

Marathon Oil Permian LLC.

Surface Use Plan

Line Number	Remark Text
0003	NM-11-LN SPECIAL CULTURAL RESOURCE LEASE NOTICE:
0004	ONE ARCHAEOLOGICAL SITE HAS BEEN FOUND IN THE
0005	SE OF SEC 12.
0006	SENM-S-22 PRAIRIE CHICKENS
0007	07/23/2013 RENT PAID 03/01/2013 PER ONRR
0008	06/05/2014 RENT PAID 03/01/2014 PER ONRR
0009	02/04/2015 - CHEVRON MIDCONTINENT LP - NM2881 NW
0010	04/01/2017 - CROWN V NMB001240 SW
0011	02/04/2015 - OPERATING RIGHTS ADJUDICATED. SEE
0012	WORKSHEET
0013	04/24/2017 - OPERATING RIGHTS ADJUDICATED SEE WS;
0014	09/15/2017 - MARATHON OIL PERMIAN WYB002107 N/W
0015	09/15/2017 - OPERATING RIGHTS ADJUDICATED;

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Lea County, NM

APD Surface Use Plan of Operations

Existing Roads

- The operator will improve or maintain existing roads in a condition the same as or better than before operations begin. The operator will repair pot holes, clear ditches, repair the crown, etc. All existing structures on the entire access route such as cattle guards, other range improvement projects, culverts, etc. will be properly repaired or replaced if they are damaged or have deteriorated beyond practical use. Marathon Oil Permian LLC will prevent and abate fugitive dust as needed, whether created by vehicular traffic, equipment operations, or wind events. BLM written approval will be acquired before application of surfactants, binding agents, or other dust suppression chemicals on roadways.

- The location is approximately 64.7 miles from Carlsbad, NM.

  From Carlsbad, NM, at the intersection of w. Greene St. And n. Canal St. Head east on W. Greene Street toward s. Canal St. For 2.2 miles to refinery road on the right. Travel southeast on refinery road for 12.5 miles to New Mexico state highway 31 on the left. Travel northeast on New Mexico state highway 31 for 2.4 miles to New Mexico state highway 128 E on the right. Travel southeast on New Mexico State Highway 128 E. For 38.7 to battle axe road on the right. Travel on battle axe rd. For 0.3 miles. Turn right to stay on battle axe road and continue for 2.6 miles. Turn right to stay on battle axe road and continue for 2.6 miles. Again, turn right to stay on battle axe road and continue for 2.6 miles to an existing lease road on the right. Travel southeast on said existing road for 0.8 miles to the proposed lease road on the right. Travel proposed lease road for 31 feet to proposed well pad.

New or Reconstructed Access Roads – Survey plat

- There will be 31' of new road constructed for the well pad and facilities.

- Road Width: The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed 14'. The maximum width of surface disturbance shall not exceed 25'.

- Maximum Grade: 3%

- Maximum Slope: 3%

- Crown Design: Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2%. The road shall conform to cross section and plans for typical road construction found in the BLM Gold Book.
- Ditch Design: Ditching will be constructed on both sides of road.
- Cattle guards: 0
- Major Cuts and Fills: None
- Type of Surfacing Material: Caliche

Location of Existing Wells (Exhibit 3)

- 1-Mile radius map is attached

Location of Existing and/or Proposed Production Facilities (Exhibit 4)

- Proposed Central Tank Battery (CTB) is proposed on the east side of the proposed well pad in NWSW Sec. 14 T25S, R34E, NMNM 136221.
    - No open top tanks will be used.
    - Open vent exhaust stacks will be modified to prevent birds or bats from entering, discourage perching, roosting, and nesting.
    - The proposed CTB will have a secondary containment 1.5 times the holding capacity of largest storage tank.
    - All above ground structures will be painted a non-reflective shale green for blending with the surrounding environment.
    - The proposed CTB will have oil and water truck hauled from the facility.
    - There are 10 - 750 bbl steel tanks for oil storage and 24 – 750 bbl steel tanks for water storage planned for the CTB.
- Pipelines: 6 3-phase flowlines ranging from 300-400 feet from the wellhead to the CTB.
    - ROW has been applied for and construction of pipeline will not commence until ROW has been approved.
    - All construction activity will be confined to the approved ROW.
    - Pipeline will run parallel to the road and will stay within approved ROW.
- Powerlines: No powerlines, power will be provided via a natural gas generator.

Location and Types of Water Supply (Exhibit 5)

- Existing freshwater ponds in various locations will be utilized for drilling operations.
    - Jazz Pond
        - Location: Section 34, T25S, R35E – LAT 32.0816 LONG -103.3546
        - Permit Type: Private
        - Transportation: 10" expanding pipe transfer line will run north and westerly from pond along lease road approx. 5.8 miles to proposed location.
        - Land Ownership: Private
        - Transportation Ownership: Private
        - Volume (bbls): 147,500
    - Pond
        - Location: Section 35, T24S, R34E – LAT 32.1673 LONG -103.4461
        - Permit Type: Private
        - Transportation: A temporary 10" expanding pipe transfer line will run East from pond along lease rd. then **turn** South along proposed access road approx. 2.1 Miles.
        - Land Ownership: Private
        - Transportation Ownership: Private
        - Volume (bbls): 147,500
    - Madera Pond
        - Location: Section 30, T24S, R35E – LAT 32.1796 LONG -103.4449
        - Permit Type: Private
        - Transportation: A temporary 10" expanding pipe transfer line will run south from pond along access rd. then west along proposed access road approx. 4.19 Miles.

        - Land Ownership: Private
        - Transportation Ownership: Private
        - Volume (bbls): 147,500

- Fresh water will be obtained from a private water source
    - Madera
    - Brad Beckem
    - Rockhouse
- A temporary 10" expanding pipe transfer line will be placed parallel to the road and will stay within 10' of lease or access roads.
- A BLM ROW will not be required for the water transfer line.

Construction Material

- Caliche will be used to construct well pad and roads. Material will be purchased from a private permitted pit.
- The proposed source of construction material will be located:
    - Source 1: Bert Madera's mineral pit located in section 6, T25S, R35E
    - Source 2: Bert Madera's mineral pit located in section 26, T24S, R34E
        - Payment shall be made by construction contractor.
- Notification shall be given to BLM at (575) 234-5909 at least 3 working days prior to commencing construction of well pad or related infrastructure.

Methods for Handling Waste

- Waste Type: Drilling
    - Description: All chemicals, salts, frac sand, produced oil, produced water and other waste material produced during drilling and completion operations.
    - Amount of Waste (bbls, gal, or lbs): 5100 bbls
    - Waste Disposal Frequency: Daily
    - Waste Containment Description: Open Top Tanks

- Waste Disposal Type: Haul to Commercial Facility
- Disposal Location Ownership: Private
- Disposal Location Description: Waste will be removed and disposed of properly at a state approved disposal facility.

- Waste Type: Garbage
  - Description: Garbage and trash produced during drilling and completion operations.
  - Amount of Waste (bbls, gal, or lbs): 1200 lbs
  - Waste Disposal Frequency: Weekly
  - Waste Containment Description: All garbage will be stored in secure containers with lids.
  - Waste Disposal Type: Haul to Commercial Facility
  - Disposal Location Ownership: Private
  - Disposal Location Description: All garbage will be collected and disposed of properly at a State approved disposal facility.
- Waste Type: Sewage
  - Description: Human waste and grey water.
  - Amount of Waste (bbls, gal, or lbs): 600 bbls
  - Waste Disposal Frequency: Weekly
  - Waste Containment Description: Portable toilets and sewage tanks.
  - Waste Disposal Type: Haul to Commercial Facility
  - Disposal Location Ownership: Private
  - Disposal Location Description: All sewage waste will be disposed of properly at a State approved disposal facility.
- The well will be drilled utilizing a closed loop system. Drill cutting will be properly disposed of into steel tanks and taken to an NMOCD approved disposal facility.

Ancillary Facilities

- Ancillary Facilities will not be required for this proposed project.

Well Site Layout

- Surveyor Plat
    - Exterior well pad dimensions are 525' by 629'. Note this pad will have 6 total wells, see Well Pad Surface Plat.
    - Interior well pad dimensions from first point of entry (well head) are
        - Dogie Draw Fed Com 25 34 14 WA 2H:

          N-410', S-220', E-290', W-236'.
        - Dogie Draw Fed Com 25 34 14 TB 1H:

          N-410', S-220', E-260', W-266'.
        - Dogie Draw Fed Com 25 34 14 AV 24H:

          N-410', S-220', E-230', W-296'.
        - Ender Wiggins F C 25 374 14 WA 1H

          N-180', S-450', E-276', W-250'
        - Ender Wiggins F C 25 374 14 WD 2H

          N-180', S-450', E-306', W-220'
        - Ender Wiggins F C 25 374 14 TB 3H

          N-180', S-450', E-246', W-280'
    - Tank battery pad dimensions are 180' by 300' by 238' by 456'.
    - Total disturbance area needed for construction activities will be 9.16 acres.
    - Topsoil will be places on the west side of the pad to accommodate interim reclamation activities.
    - Cut and fill will be minimal
- Rig Layout

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Plans for Surface Reclamation

Reclamation Objectives

- The objective of interim reclamation is to restore vegetative cover and a portion of the landform sufficient to maintain healthy, biologically active topsoil; control erosion; and minimize habitat and forage loss, visual impact, and weed infestation, during the life of the well or facilities.

- The long-term objective of final reclamation is to return the land to a condition similar to what existed prior to disturbance. This includes restoration of the landform and natural vegetative community, hydrologic systems, visual resources, and wildlife habitats. To ensure that the long-term objective will be reached through human and natural processes, actions will be taken to ensure standards are met for site stability, visual quality, hydrological functioning, and vegetative productivity.

- The BLM will be notified at least 3 days prior to commencement of any reclamation procedures.

- If circumstances allow, interim reclamation and/or final reclamation actions will be completed no later than 6 months from when the final well on the location has been completed or plugged. We will gain written permission from the BLM if more time is needed.

- Reclamation will be performed by using the following procedures:

Interim Reclamation Procedures

- Within 6 months of first production, the well location and surrounding areas will be cleared of, and maintained free of, all materials, trash, and equipment not required for production. A plan will be submitted showing where interim reclamation will be completed in order to allow for safe operations, protection of the environment outside of drilled well, and following best management practices found in the BLM "Gold Book". If a plan was submitted with apd, plan will be executed within 6 months of first production.
- Current plans for interim reclamation include reducing the pad size by 100' on the west side and 100' on the south, reducing the pad size from 9.16 acres to 6.74 acres.

- In areas planned for interim reclamation, all the surfacing material will be removed and returned to the original mineral pit or recycled to repair or build roads and well pads.

- The areas planned for interim reclamation will then be recontoured to the original contour if feasible, or if not feasible, to an interim contour that blends with the surrounding topography as much as possible. Where applicable, the fill material of the well pad will be backfilled into the cut to bring the area back to the original contour. The interim cut and fill slopes prior to re-seeding will not be steeper than a 3:1 ratio, unless the adjacent native topography is steeper. Note: Constructed slopes may be much steeper during drilling, but will be recontoured to the above ratios during interim reclamation.

- Topsoil will be evenly respread and aggressively revegetated over the entire disturbed

area not needed for all-weather operations including cuts & fills. To seed the area, the proper BLM LPC seed mixture free of noxious weeds, will be used.

- Proper erosion control methods will be used on the area to control erosion, runoff and siltation of the surrounding area.
- The interim reclamation will be monitored periodically to ensure that vegetation has reestablished

Final Reclamation (well pad, buried pipelines, and power lines, etc.)

- Prior to final reclamation procedures, the well pad, road, and surrounding area will be cleared of material, trash, and equipment.
- All surfacing material will be removed and returned to the original mineral pit or recycled to repair or build roads and well pads.
- All disturbed areas, including roads, pipelines, pads, production facilities, and interim reclaimed areas will be recontoured to the contour existing prior to initial construction or a contour that blends in distinguishably with the surrounding landscape. Topsoil that was spread over the interim reclamation areas will be stockpiled prior to recontouring. The topsoil will be redistributed evenly over the entire disturbed site to ensure successful revegetation.
- After all the disturbed areas have been properly prepared; the areas will be seeded with the proper BLM LPC seed mixture free of noxious weeds.
- Proper erosion control methods will be used on the entire area to control erosion, runoff and siltation of the surrounding area.

Surface Ownership

- All operations for the proposed well are on surface managed by Private Land Owner.
- If on private surface, supply:
    - Mark and Annett McCloy Trustees
    - P.O. Box 795, Tatum, NM 88267
    - 432-914-4459
- The private surface owner has been mailed a copy of the Surface Use Plan of Operations.

Other Information

- On-site performed by BLM NRS: Colleen Cepero 11/28/2017.
- Cultural report attached

- Erosion / Drainage: Drainage control system shall be constructed on the entire length of road by the use of any of the following: ditches and lead-off ditches.
- Exclosure fencing will be installed around open cellar to prevent livestock or large wildlife from being trapped after installation. Fencing will remain in place while no activity is present and until backfilling takes place.
- Terrain: Surrounding landscape is fairly flat.
- Soil: Sandy
- Vegetation: Vegetation present in surrounding area includes mesquite, shrubs, and grass.
- Wildlife: No wildlife observed, but it is likely that deer, rabbits, coyotes, and rodents pass through the area. This proposed pad falls inside the LPC polygon but outside the LPC timing stipulated areas.
- Surface Water: There are no ponds, lakes, streams, or rivers within several miles of proposed location
- Cave Karst: Low karst potential area with no caves or visual signs of karst features found.
- Watershed Protection: The entire perimeter of the well pad will be bermed to prevent oil, salt, and other chemical contaminates from leaving the well pad.
- Water wells: There is a water well located 490' from the proposed well site. Depth to groundwater is estimated at 135'.
- Residences and Buildings: No dwellings within the immediate vicinity of the proposed location.
- Well Signs: Well signs will be in compliance per federal and state requirements and specifications.
- Noxious Weeds: Marathon, in coordination with the BLM, may develop a noxious weed plan to include recommendations and guidelines for noxious weed and invasive species management throughout the analysis area and to minimize the spread of weeds to adjacent areas.

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CONTACTS

Sr. Regulatory
Jennifer Van Curen
713-296-2500
jvancuren@marathonoil.com

Regulatory
Melissa Szudera
713-296-3179
mszudera@marathonoil.com

Land
Nancy Pohl
432-201-8015
npohl@marathonoil.com

Construction
Harvey Waller
281-841-5067
pbconstsuper@marathonoil.com

Drilling

Dogie Draw
Camilo Arias
713-296-2985
aarias@marathonoil.com

Ender Wiggins
Jacob Beaty
713-296-1915
jabeaty@marathonoil.com

Completions
Hank Porter
713-296-4367
hlporter@marathonoil.com